

State of California  
AIR RESOURCES BOARD

**Second Notice of Public Availability of Modified Text**

PUBLIC HEARING TO CONSIDER THE ADOPTION OF EXHAUST AND EVAPORATIVE  
EMISSION CONTROL REQUIREMENTS FOR SMALL OFF-ROAD ENGINES LESS  
THAN OR EQUAL TO 19 KILOWATTS AND EQUIPMENT THAT USE SUCH ENGINES

Public Hearing Date: September 25, 2003  
Public Availability Date: May 14, 2004  
Deadline for Public Comment: June 1, 2004

At its September 25, 2003, public hearing, the Air Resources Board (ARB or the Board) approved the adoption of sections 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, California Code of Regulations (CCR), along with the incorporated "Small Off-Road Engine Evaporative Emission Test Procedures, TP-901 and TP-902" and the incorporated "Small Off-Road Engine Evaporative Emissions Control System Certification Procedures, CP-901 and CP-902." The purpose of those regulations and test procedures is to establish evaporative emission standards for small off-road engines, and equipment that use small off-road engines, less than or equal to 19 kilowatts (kW). The Board also approved the adoption of sections 2405.1, 2405.2, and 2405.3 and amendments to sections 2400, 2401, 2403, 2404, 2405, 2407, 2408, and 2409, title 13, CCR, along with amendments to the incorporated "California Exhaust Emission Standards and Test Procedures for 1995 and later Small Off-Road Engines," as last amended January 28, 2000, title 13, CCR. In addition, the Board approved the adoption of the incorporated "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines." The purpose of those modifications to the regulations and test procedures is to include more stringent exhaust emission standards for small off-road engines less than or equal to 19 kW. In addition, the purpose of the updated test procedures is to more closely harmonize with the federal small engine test procedures (40 Code of Federal Regulations, part 90, subparts A, B, D, and E and corresponding appendices).

At the hearing, the staff presented, and the Board approved modifications to the regulations originally proposed in the Staff Report released on August 8, 2003. In response to comments received during the 45-day comment period and at the Board hearing on September 25, 2003, modified text was made publicly available for a 30-day comment period on February 9, 2004. The modified text described in this document responds to comments received during the 30-day comment period that ended March 11, 2004. The following describes the modifications, by section number:

## EXHAUST REGULATIONS

### §2403 – Exhaust Emission Standards and Test Procedures - Small Off-Road Engines

The standards table in paragraph (b)(1) was modified to remove all references to the emission standards proposed in the August 8, 2003 Staff Report (compliance "Option A").

Paragraph (b)(1) footnote seven was deleted to coincide with the modifications made to the table in paragraph (b)(1).

Paragraph (b)(2) was modified to clarify existing language and delete references to sections 2754, 2754.1, 2751(b) and 2757.

### §2404 – Emission Control Labels and Consumer Information - 1995 and Later Small Off-Road Engines

Paragraph (c)(4)(H) was modified to clarify that emission labels may incorporate multiple model years in the compliance statement. In addition, the label must clearly state that the engine meets the exhaust (EXH) emission regulations.

### §2408 – Emission Reduction Credits – Certification Averaging, Banking, and Trading Provisions

Paragraph (f)(1) was modified to include “maximum modal power of the test engine” as an example of an alternate definition of “power” that may be approved by the Executive Officer, for use in calculating emission credits.

## EXHAUST TEST PROCEDURES

### §90.103 – Exhaust emission standards

The standards table in paragraph (a)(1) was modified to remove all references to the emission standards proposed in the August 8, 2003 Staff Report (compliance "Option A").

Paragraph (a)(1) footnote four was deleted to coincide with the modifications made to the table in paragraph (a)(1).

Paragraph (a)(3) was modified to clarify existing language and delete references to sections 2754, 2754.1, 2751(b) and 2757.

### §90.104 – Compliance with emission standards

Paragraphs (h)(2) and (h)(2)(vii), (viii) and (ix) were added and modified to clarify the

protocol for determining the deterioration factor if the manufacturer chooses to conduct more than one test per test point and/or test multiple engines. If the engine manufacturer conducts more than one test at a test point, the number of tests at every test point must be the same. Additional engines identical to the original test engine may be tested with prior approval from the Executive Officer. In such cases, data collection must remain consistent for all test engines. The testing of multiple engines requires the determination of separate deterioration factors for each test engine. The official deterioration factor shall be the average of the separate deterioration factors for each test engine. In the case of multiple zero-hour tests on a single engine the engine manufacturer must select the last zero-hour test as the official zero-hour test upon which the deterioration factor is applied. If multiple engines are tested the manufacturer must select the highest test result among the last zero-hour test of each engine as the official zero-hour test upon which the deterioration factor is applied.

#### §90.117 – Certification procedures – test engine selection

Paragraph (c) was modified to remove the requirement that the manufacturer must receive pre-approval of the test engine selected prior to applying for certification. The manufacturer must include in its application for certification the reason for its choice of test engine, and the Executive Officer will notify the manufacturer if the Executive Officer determines that the test engine configuration does not meet the requirements for selection.

#### §90.118 – Certification procedure – service accumulation and usage of deterioration factors

Paragraph (f) was modified to require manufacturers to indicate in the application for certification if auxiliary fans are used, and not require approval by the Executive Officer prior to service accumulation. The manufacturer must maintain and make available at the request of the Executive Officer all records regarding the use of auxiliary fans.

#### §90.307 – Engine cooling system

Similar to the modification to section 90.118 noted above, this section was modified to require manufacturers to indicate in the application for certification if auxiliary fans are used during the engine emission test, and not require approval by the Executive Officer prior to service accumulation. The manufacturer must maintain and make available at the request of the Executive Officer all records regarding the use of auxiliary fans.

#### §90.409 – Engine dynamometer test run

Paragraph (a)(3) was modified to fix a typographical error and to specify that, for vertical shaft engines greater than 80 cubic centimeters (cc) but less than 225 cc displacement volume equipped with an engine speed governor, the manufacturer may carry over certification of its 2004 model year California certified engine family to the 2005 model

year. The engine test results done without the use of the governor may be used for compliance. Prior written approval of the Executive Officer is required and the manufacturer must meet all other requirements for 2005 model year compliance.

#### §90.410 – Engine test cycle

Similar to the modification to section 90.409(a)(3) noted above, paragraph (b) was modified to specify that, for vertical shaft engines greater than 80 cc but less than 225 cc displacement volume equipped with an engine speed governor, the manufacturer may carry over certification of its 2004 model year California certified engine family to the 2005 model year. The engine test results done without the use of the governor may be used for compliance. Prior written approval of the Executive Officer is required and the manufacturer must meet all other requirements for 2005 model year compliance.

## EVAPORATIVE REGULATIONS

### § 2750 – Purpose

Modified paragraph (b) to reflect two compliance options.

### § 2751 – Applicability

Paragraph (d) was added to exempt snow throwers and ice augers from the regulations because they are not a significant source of emissions.

### § 2752 – Definitions

Paragraph (a)(6) was modified to allow permeation testing at temperatures higher than 40 °C and with fuels containing 10 percent ethanol or 15 percent methanol in addition to California CERT fuel.

Paragraph (a)(9) was modified to clarify that the engine family and the evaporative family may be considered equivalent for integrated equipment greater than 80 cc at the manufacturer's discretion.

Paragraph (a)(10) was modified to replace “Evaporative Family Emission Limit” with “Evaporative Model Emission Limit” (EMEL) to clarify definition.

Paragraph (a)(11) definition was added to clarify differential between effective standard for a specific model and the declared EMEL.

Paragraph (a)(26) definition was modified to clarify applicability.

### § 2753 – Certification

Paragraph (b) was modified to describe certification under section 2754, and section 2757.

Paragraph (b)(1) was modified to allow the submittal of Executive Order numbers approving fuel hose designs in lieu of actual fuel hose permeation data.

Paragraph (b)(2) was modified to allow the submittal of Executive Order numbers approving component designs in lieu of actual data.

All but the last two sentences of paragraph (b)(4) were moved to paragraph (b)(3) for clarity and modified to remove reference to handheld equipment.

Paragraph (c)(1) was modified to reference applicable standards.



## § 2754 – Evaporative Emission Performance Standards

Deleted section 2754 (original standards proposed on August 8, 2003).

### § 2754.1 – Alternative Performance Standards

Section was re-enumerated to section 2754. This section was also modified to remove the requirement to submit a certification plan and limits on the selecting an alternative certification option. A combined table “Table 1, Evaporative Emission Standards” was added to streamline and clarify regulatory intent. Table 1 replaced performance and design tables in section 2754.1(a) and in section 2754.1(b). Diurnal standard in Table 1 for equipment > 80 cc, except walk-behind mowers, references tank volume in liters. Previously, the standard was based on tank volume in gallons.

§ 2754.1(a) – Re-enumerated to subsection 2754(a). Paragraph was modified to reference models and requirements in Table 1 of section 2754. Evaporative Emission Performance Standards for Small Off-Road Engines table was removed.

§ 2754.1(a)(1)(A) – Re-enumerated to subsection 2754(a)(1)(A). Paragraph was modified to clarify that approval by the Executive Officer is not needed for actively purged carbon canisters.

§ 2754.1(a)(1)(C) – Re-enumerated to subsection 2754(a)(1)(C). Paragraph was modified to allow permeation testing at higher temperatures and with fuel containing 10 percent ethanol, or 15 percent methanol, or Indolene. Paragraph was also modified to allow the submittal of Executive Order numbers approving fuel hose designs in lieu of actual fuel hose permeation data.

§ 2754.1(b) – Re-enumerated to subsection 2754(b). Paragraph was modified to reference models and requirements in Table 1 of section 2754. The following tables were removed to and combined in Table 1 of section 2754 to add clarity; Diurnal Evaporative Emission Standards for Walk-Behind Mowers, System Design Requirements for Equipment Other than Walk-Behind Mowers Using Small Off-Road Engines with Engine Displacements > 80 cc - < 225 cc, and System Design Requirements for Small Off-Road Engines with Engine Displacements  $\geq$  225 cc.

§ 2754.1(b)(1)(A) – Re-enumerated to subsection 2754(b)(1)(A). Paragraph was modified to clarify that approval by the Executive Officer is not needed for actively purged carbon canisters.

§ 2754.1(b)(1)(C) – Re-enumerated to subsection 2754(b)(1)(C). Paragraph was modified to allow permeation testing at higher temperatures and with fuel containing 10 percent ethanol, or 15 percent methanol, or Indolene. Paragraph was also modified to allow the submittal of Executive Order numbers approving fuel hose designs in lieu of

actual fuel hose permeation data.

§ 2754.1(b)(2) – Deleted subsection 2754(b)(2). Paragraph and table were removed because it is not ARB’s intent to eliminate the option to certify by design.

#### § 2754.2 – Certification Averaging and Banking

Re-enumerated section to 2754.1.

§ 2754.2(b)(5) – Re-enumerated to subsection 2754.1(b)(5). Paragraph was modified to clarify intent with regard to Evaporative Family Emission Limit Differentials (EFELD) and declared EMEL.

§ 2754.2(e)(1) – Re-enumerated to subsection 2754.1(e)(1). Paragraph was modified to reference definition for “EMEL” and EFELD” in calculations.

#### § 2754.3 – Validation Study

Re-enumerated section to 2754.2.

§ 2754.3(a) – Re-enumerated subsection to 2754.2(a). Paragraph was modified to applicable certification options.

§ 2754.3(f) – Re-enumerated subsection to 2754.2(f). Paragraph was modified to applicable standards.

#### § 2755 – Permeation Emissions Performance Standard

§ 2755(a) – Added language clarifying that permeation data is not required for engines or equipment meeting the requirements of section 2766.

#### § 2756 – Fuel Cap Performance Standard

Added language that allows engines or equipment to be exempted in an Executive Order issued pursuant to section 2767.

#### § 2757 – Optional Performance Standards

Paragraph was modified to reference applicable standards.

#### § 2759 – Equipment and Component Labeling

Paragraph (c)(4)(C) was modified to clarify allowable abbreviations.



Paragraph (c)(4)(E) was modified to clarify applicability and an acceptable statement of compliance.

#### § 2760 – Defects Warranty Requirements for Small Off-Road Engines

Paragraph (a) was further modified to clarify applicability.

#### § 2765 – New Equipment Compliance Testing

Paragraph (a)(1) was modified to reference applicable standards.

Paragraph (b) was modified to reference applicable standards.

#### § 2766 – Exemptions

Paragraph (b) was modified to clarify applicability and reference applicable standard.

Paragraph (c) was added to conditionally exempt generators used in on-road motor vehicles and marine vessels.

#### § 2767 – Innovative Products

Paragraph (a) was re-enumerated to subsection 2767(c).

Paragraph (a) was added to allow the Executive Officer to make a determination that tank vent emission control achieved by an innovative technology may be approved pursuant to section 2767.1 if it can be demonstrated that the technology meets the evaporative standards in section 2754.

Paragraph (b) was added to allow the Executive Officer to exempt engines and equipment from the requirements of subsection 2756(b) if it can be demonstrated that they meet the diurnal emission standards in section 2754.

#### § 2767.1 – Approved Evaporative Emission Control System Components

Added section that allows the Executive Officer to evaluate and approve fuel line, fuel tank, and carbon canisters for use on evaporative emission control systems.

### EVAPORATIVE TEST PROCEDURES

#### TP-901, Test Procedure for Determining Permeation Emissions from Small Off-Road Engines and Equipment Fuel Tanks

Modified title by adding “and equipment” to clarify applicability.

## Section 1 – Applicability

Clarified applicability of test procedure.

## Section 3 – Principle and Summary of Test Procedure

Added reference to Indolene as a test fuel. Removed reference to fusion welding. Added language requiring a seal over the tank inlet.

Section 6.1 – Added language allowing an alternative method for sealing tanks.

Section 6.4 – Relaxed resolution for measuring barometric pressure.

## Section 8 – Durability Demonstration

Removed reference to High-Density Polyethylene (HDPE).

Section 10.1 – Added language allowing alternative methods for performing leak checks.

## Section 14 – Calculating Permeation Rate Using Trip Blank Correction

Added footnote defining a tank's internal surface area.

## Section 15 – Alternative Test Procedures

Removed language limiting use of approved alternative test procedures. Added language allowing the broad use of an approved alternative test procedure.

## TP-902, Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines

Modified title by adding “and equipment” to clarify applicability.

## Section 1 – Applicability

Added reference to equipment to clarify applicability.

## Section 3 – Durability Demonstration

Replaced entire section with an industry suggested alternative titled “Pre-Certification Requirements” that achieves the same objective as the original language. New Section references a new procedure for determining canister-working capacity that replaces reference to 40 Code of Federal Regulations (CFR) test procedure.

## Section 4 – General Summary of Test Procedure

Clarified applicability of test procedure. Added language to allow engines with complete evaporative emission control systems to be tested without the chassis.

## Section 5 – Instrumentation

Added language that ARB will consider data generated with a mini-SHED if approved as an alternative test procedure.

Section 5.1 – Added language to disregard references to methanol in test procedure. Removed requirement to control instantaneous temperature to within  $\pm 5.0^{\circ}\text{F}$ .

## Section 8 – Alternative Test Procedures

Removed language limiting use of approved alternative test procedures. Added language allowing the broad use of an approved alternative test procedure.

## Attachment 1

New language that describes the procedure for determining carbon canister working capacity. The new procedure replaces the reference to an automotive procedure for determining canister working specified in 40 CFR Part 86.

## EVAPORATIVE CERTIFICATION PROCEDURES

### CP-901, Certification and Approval Procedures for Small Off-Road Engine Fuel Tanks

#### Section 4 – Certification Overview

Clarified the submittal requirements for permeation data.

#### Section 5 – Certification

Modified subsection 5.1.1 to make it consistent with 13 CCR section 2753.

### CP-902, Certification and Approval Procedure for Evaporative Emission Control Systems

#### Section 2.2 – Performance Specifications

Removed reference to useful life.

#### Section 4 – Certification Overview

Reduced the number of letters representing the evaporative family code to two. Added language allowing manufacturers certifying engines and equipment under section 2754(b) to submit Executive Order numbers for approved evaporative emission system components in lieu of test data.

Subsection 5.1.1 – Added language allowing manufacturers certifying engines and equipment under section 2754(b) to submit Executive Order numbers for approved evaporative emission system components in lieu of test data.

## Section 6.2 – Evaporative Emission Control System Modifications

Added language allowing the Executive Officer to approve fuel tank and fuel line modifications.

## Section 7.9 – Test Procedures

Added language to reference “Equivalent Fuel Line”, which replaced footnote reference.

## Section 7.13– Amendments to the Application

Added language specifying that only those pages affected need be submitted as part of a revised certification application. Clarified information to be submitted for identification purposes in a revised application.

## Attachment 1 – SORE Evaporative Family Classification Criteria

Reduced from three to two the number of evaporative family classification codes.

## Attachment 2 – Small Off-Road Engine Certification

Modified “For Systems Certified by Design” Table to allow submittal of Executive Order numbers for components in lieu of measured design values.

Staff has made several other non-substantial modifications throughout the regulations and test procedures to correct grammatical and typographical errors, correct references and citations, and improve the clarity of the regulations and test procedures.

A copy of Board Resolution 03-24 approving the regulatory action described above and the regulatory documents for this rulemaking are available online at the following ARB Internet site: <http://www.arb.ca.gov/regact/sore03/sore03.htm>

Printed copies are also available and may be obtained from Ms. Margaret Dawson, Mobile Source Control Division, (626) 575-6632 or fax (626) 459-4480.

In accordance with section 11346.8 of the Government Code, the Board directed the Executive Officer to adopt sections 2400, 2401, 2403, 2404, 2405, 2405.1, 2405.2, 2405.3, 2407, 2408, 2409, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, CCR, after making them available to the public for comment for a period of at least 30 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted. As noted above, the modified text was made publicly available for a 30-day comment period on February 9, 2004. The modified text described in this document responds to comments received during the 30-day comment period that ended March 11, 2004. These additional modifications are being made available for a second supplemental comment period of 15-days in accordance with section 11346.8 of the Government Code.

Written comments on the modifications approved by the Board may be submitted by postal mail, electronic mail, or facsimile as follows:

Postal Mail is to be sent to:  
Clerk of the Board  
Air Resources Board  
1001 "I" Street, 23<sup>rd</sup> Floor  
Sacramento, California 95814

Electronic mail is to be sent to: [sore03@listserv.arb.ca.gov](mailto:sore03@listserv.arb.ca.gov)

Facsimile submissions are to be transmitted to: (916) 322-3928.

In order to be considered by the Executive Officer, comments must be directed to the ARB in one of the three forms described above and received by the ARB by 5:00 p.m. on the deadline date for public comment listed at the beginning of this notice. Only comments relating to the above-described modifications to the text of the regulations, test procedures, and certification procedures shall be considered by the Executive Officer.

If you have special language needs, please contact the Regulations Coordinator, Alexa Malik at (916) 322-4011 or by e-mail at [amalik@arb.ca.gov](mailto:amalik@arb.ca.gov). TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

Attachments